

Quaternary Deepwater Deposits of the Golo Basin/Corsica Trough: East Corsica

Labaune, Caroline³; Sweet, Michael L.¹; Bez, Martine²; Marsset, Tania³; Droz, Laurence⁴; Calvès, Gérôme³ (1) ExxonMobil Upstream Research Company, Houston, TX. (2) Total Exploration and Production, Pau, France. (3) Ifremer, Plouzane, France. (4) Brest University, Brest, France.

Deepwater sediments of the Corsica Trough/Golo Basin represent the ultimate sink for sediments derived from the Golo River of eastern Corsica. The deposits of the five youngest deepwater lobe complex sets of the Golo system were mapped in the Corsica Trough/Golo Basin using a grid of high-resolution, 2D seismic data. Lobe complex sets were recognized by the occurrence of regionally-extensive surfaces of erosion, onlap and downlap at the base and by extensive, high-amplitude continuous reflections with a draping geometry at the top. In each case these lobe complex sets were fed by sediment that came down either the North or South Golo Submarine Canyons. Based on seismic facies and limited core data from the youngest of the complex sets, sediment was primarily transported by turbidity currents. In addition, a small component of sediment is contained in chaotic seismic facies interpreted as mass transport complexes derived from the Pianosa Ridge at the eastern margin of the basin.

Internal to the lobe complex sets are a series of lobes complexes and higher-order stratigraphic elements. The lobe complexes were fed by either the North or South Golo Canyons. We infer their occurrence to be related to shifting of deltaic lobes of the Golo River. The volume of sediment comprised by each complex set ranges from 2.8 to 6.8 cubic kilometers with the youngest and oldest complex sets having the largest volumes.

The youngest complex set is draped by a high-amplitude continuous seismic facies that has been penetrated by several cores. These cores and ultra high-resolution CHIRP seismic data suggest a decrease in sedimentation to deepwater over the time between 18,000 to 14,000 years before present. These data suggest that deposition of the youngest complex sets in the basin ended early in the Oxygen Isotope Stage 1 sea level rise, probably soon after the direct connection was severed between the delta of the Golo River and the heads of the North and South Golo Canyons.